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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,942	03/30/2004	Vladimir Pentkovski	42P18224	5784

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EXAMINER
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SCHLIE, PAUL W

ART UNIT	PAPER NUMBER
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2186

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/20/2006	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/813,942	<b>Applicant(s)</b> PENTKOVKSI ET AL.	
	<b>Examiner</b> Paul W. Schlie	<b>Art Unit</b> 2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 8-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 October 2006 is/are: a) ☒ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                      | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

### **DETAILED ACTION**

1. Claims 8-38 have been examined as amended 10/6/06.

#### ***Response to Arguments***

Applicant's arguments filed 10/6/06 with respect to objections to the specification have been fully considered and are persuasive. As although the request to clarify the specification so that the scope and nature of the applicant's claimed invention may be more ideally understood; such further clarification was not strictly required, and thereby the objection is withdrawn and the examiner will interpret the claims and specification as best understood in view of that considered well known in the art.

Applicant's arguments filed 10/6/06 with respect to the rejection of the drawings due to missing labels have been fully considered and are persuasive; and have been withdrawn in view of the submission of new drawings correcting the deficiency. However, the examiner's objection to the drawings due to lack of sufficient structural detail to enable the proper understanding and scope of the claimed invention is maintained.

Applicant's arguments filed 10/6/06 with respect to the rejection of the claim 26 under U.S.C. 35 112 second paragraph have been fully considered but not persuasive; as if claim 26 is to be read as "The computer system of Claim 25 wherein the first bus agent comprises an apparatus being a member of the group consisting of a microprocessor, a DRAM, a magnetic storage medium, a bus arbitration device, and a wireless storage medium", as although the disclosure attempts to generalize the definition of a "processor" beyond the scope of that considered reasonable and thereby

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indirectly extend the scope of elements inclusive of a "wireless storage medium" which may credibly compose a bus agent, such attempt is rejected without sufficient detailed support within the disclosure or claims regarding exactly how a wireless storage medium may actually store or actively process information related to the semantic actions disclosed for a bus agent to be considered a supported element of the group.

Applicant's arguments filed 10/6/06 with respect to the rejection of the claims 8, 18, 27 and 31 under U.S.C. 35 102 have been fully considered but not persuasive. As Witek is considered to teach, as effectively acknowledged by the applicant in the traverse of the rejection, a means by which a value and corresponding ownership local to a processor may be made globally visible (to a plurality of processors) by utilizing Request/Read-For-Ownership (RFO) semantics; where as Witek does not limit the teaching to strongly or weakly ordered implementations, no such limitation is presumed assuming appropriate safeguards are maintained to warrant coherency; thereby the applicant's claims are considered inherently taught by Witek and merely expressed in other form in absents of any material explanation of some novelty derived capability or utility otherwise (as although the applicant seems to assert a novelty associated with an out-of-order grant of RFO for a strongly ordered system, in fact such an implementation may be viewed as a weakly ordered system in this respect, thereby the novelty claimed is in fact indistinguishable from an implementation of RFO in weakly ordered system which the applicant is considered to correspondingly indirectly acknowledge as being known as being implicitly identifiable as those which are not strongly ordered RFO implementations).

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Applicant's arguments filed 10/6/06 with respect to the rejection of the claims 9-17, 19-25, 28-30 and 32-38 under U.S.C. 35 103 have been fully considered but not persuasive. As the applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made, nor attempt to show how corresponding limitations substantively avoid such references or objections in view of that reasonably considered obvious to those of ordinary skill in the art. However in view of the augment and amended claims the rejection has been further clarified utilizing the same art of record.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a) because they fail to depict the necessary structural implementation and/or protocol detail essential for the proper understanding of the disclosed invention; see MPEP § 608.02(d).

More specifically, although example logical content of a local and globally visible store queue/buffer (cache) has been depicted, the drawings are considered to lack sufficient detail necessary to enable the understanding of how the claimed invention functionally and correspondingly structurally differs from otherwise well understood local or global cache implementations maintaining ownership tags based upon global read/request-for-ownership (RFO) requests and/or corresponding grants typically utilized to maintain local cache coherence within multi-processor distributed cache implementations; and must show every feature of the invention specified in the claims. Therefore, a sufficiently detailed depiction of a processor comprising the structural

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means and coupling of a first and second storage unit and bus agent must be shown or the feature(s) canceled from the claim(s). The applicant is reminded that no new matter may be added.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended drawing sheets should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. Paragraph [0029] is objected to as it is considered well understood by those of ordinary skill in the art that a key differentiation between a "processor" and generic logic, is not whether it performs an operation as a result of receiving signals or instructions, but whether or not it itself further controls their generation. Corrective action is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 8-38 are rejected per 35 U.S.C. 112, first paragraph, as based on a disclosure that is not enabling. As elements critical or essential to the practice of the invention, are neither included in the claims nor enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

More specifically, as no method, means, or corresponding structure as presumed to be required to enable subsequent loads which may correspond to the stores which were alternatively chosen to be spilled into a globally visible non-committed store queue and/or corresponding buffer (cache) in lieu of the local cache (also presumably needing to maintain global coherency) may be subsequently globally resolved; and no structure nor corresponding methods presumably needed to maintain coherency between potentially multiple processor local caches and said globally visible queue/buffer (cache) as presumed to be the context of the claimed invention has been disclosed; Thereby lacking critical elements necessary to enable one of ordinary skill in the art to make and/or use the claimed invention without undue experimentation.

Corrective action is required, however the applicant is reminded that no new matter may be added not supported by the original disclosure.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter that the applicant regards as his invention.

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7. Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. As it is not clear what is intended by claiming a computer system wherein the first bus agent comprises an apparatus chosen from a list comprising "a wireless storage medium". Clarification or correction is required.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 8, 18, 27 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Witek et al. (5,043,886).

As per independent claims 8, 18, 27 and 31, Witek et al. teaches a system and/or methods comprising a processor which may contain a store buffer/register and a cache such that values stored in the store buffer/register may be stored in the cache independently of if previously stored values had been written to main memory, itself considered within the context of the reference to be analogous to becoming globally observable by the fact that a value may only be stored in main memory (which may itself be cached and considered a global store buffer) after RFO ownership has been granted and thereby becoming globally known through a global snooping interface (i.e. bus agent) monitoring such FRO requests by other processor/cache's bus agents



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correspondingly complying with the established semantics (see figures 1-4 and column 2 lines 43-68); where all corresponding logic is considered inherent in the methods disclosed and who's implementation is considered obvious to one of ordinary skill in the art at the time of the disclosed invention.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 9-17, 19-25, 28-30 and 32-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Witek et al. (5,043,886).

As per claims 9-17, 19-25, 28-30 and 32-38 being dependent on claims 8, 18, 27, 31, or correspondingly dependant claim inclusively, where although not taught explicitly by Witek, a main memory cache may be considered a "global observation store buffer" (GoSB) storing values only after RFO has been granted and thereby becoming globally observed (claim 9); itself inherently comprising a "non-committed store queue" (NcSQ) storing globally cached data not yet literally written (i.e. tagged as being dirty) to main memory and thereby "globally observed" (claim 10); with remaining claims 11-17 being considered mere recitations of elements or behaviors considered otherwise inherent of typical cache implementation as may be obviously utilized to implement aforementioned GoSB and NcSQ caches/elements, and thereby considered obvious in combination with that more explicitly taught by Witek. Where further as claims 19-25, 28-30 and 32-38

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are considered to reflect that effectively embodied within claims 9-17 in combination with that reviewed in the rejection of their parent claims under 35 U.S.C. 102, although in other form or being non-otherwise patentably distinguishable, they are correspondingly rejected per the same arguments as presented above.

***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul W. Schlie whose telephone number is 571-272-6765, or whose email address is [paul.schlie@uspto.gov]. The examiner can normally be reached on Mon-Thu 8:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 517-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
PIERRE BATAILLE  
PRIMARY EXAMINER  
12/14/06